



Designation: D2887 – 23

Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography¹

This standard is issued under the fixed designation D2887; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This test method covers the determination of the boiling range distribution of petroleum products. The test method is applicable to petroleum products and fractions having a final boiling point of 538 °C (1000 °F) or lower at atmospheric pressure as measured by this test method. This test method is limited to samples having a *boiling range* greater than 55.5 °C (100 °F), and having a vapor pressure sufficiently low to permit sampling at ambient temperature.

NOTE 1—Since a *boiling range* is the difference between two temperatures, only the constant of 1.8 °F/°C is used in the conversion of the temperature range from one system of units to another.

1.1.1 *Procedure A (Sections 6 – 14)*—Allows a larger selection of columns and analysis conditions such as packed and capillary columns as well as a Thermal Conductivity Detector in addition to the Flame Ionization Detector. Analysis times range from 14 min to 60 min.

1.1.2 *Procedure B (Sections 15 – 23)*—Is restricted to only 3 capillary columns and requires no sample dilution. In addition, Procedure B is used not only for the sample types described in Procedure A but also for the analysis of samples containing biodiesel mixtures B5, B10, and B20. The analysis time, when using Procedure B (Accelerated D2887), is reduced to about 8 min.

1.2 This test method is not to be used for the analysis of gasoline samples or gasoline components. These types of samples must be analyzed by Test Method [D7096](#).

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appro-*

priate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- [D86](#) Test Method for Distillation of Petroleum Products and Liquid Fuels at Atmospheric Pressure
- [D1160](#) Test Method for Distillation of Petroleum Products at Reduced Pressure
- [D2892](#) Test Method for Distillation of Crude Petroleum (15-Theoretical Plate Column)
- [D4057](#) Practice for Manual Sampling of Petroleum and Petroleum Products
- [D4175](#) Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants
- [D4626](#) Practice for Calculation of Gas Chromatographic Response Factors
- [D6299](#) Practice for Applying Statistical Quality Assurance and Control Charting Techniques to Evaluate Analytical Measurement System Performance
- [D6300](#) Practice for Determination of Precision and Bias Data for Use in Test Methods for Petroleum Products, Liquid Fuels, and Lubricants
- [D6708](#) Practice for Statistical Assessment and Improvement of Expected Agreement Between Two Test Methods that Purport to Measure the Same Property of a Material
- [D7096](#) Test Method for Determination of the Boiling Range Distribution of Gasoline by Wide-Bore Capillary Gas Chromatography
- [D7169](#) Test Method for Boiling Point Distribution of

¹ This test method is under the jurisdiction of Committee [D02](#) on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee [D02.04.0H](#) on Chromatographic Distribution Methods.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

*A Summary of Changes section appears at the end of this standard